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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/913,344	08/10/2001	Gerhard Hans Schleser	21975	4119

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EXAMINER

GAKH, YELENA G

ART UNIT PAPER NUMBER

1743

DATE MAILED: 04/26/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/913,344

Applicant(s)

SCHLESER ET AL.

Examiner

Yelena G. Gakh, Ph.D.

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 18 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) 9-14, 18 is/are allowed.
- 6) ☒ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 9-14, 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. Election of claims 9-14 and 18 with traverse, filed on 12/23/03, is acknowledged.

In response to the Applicant's arguments regarding restriction requirements the examiner would like to notice that adding new claim 18 does not overcome the lack of unity between two groups of invention; the only common technical feature recited in independent claims, i.e. claim 1 and claims 9 and 18, is a combination of graphite and means for inducing heat; this is a conventional technical feature for any heating means utilizing graphite crucible, see e.g. Hart (US 3,575,399), and therefore cannot be considered a special technical feature. Also, only independent claims need to be considered in restriction requirements, see PCT Rule 13.2:

(c) **Independent and Dependent Claims.** Unity of invention has to be considered in the first place only in relation to the independent claims in an international application and not the dependent claims. By "dependent" claim is meant a claim which contains all the features of another claim and is in the same category of claim as that other claim (the expression "category of claim" referring to the classification of claims according to the subject matter of the invention claimed for example, product, process, use or apparatus or means, etc.).

Therefore, the restriction requirement is proper and is made FINAL.

Drawings

2. No drawing accompanying the US application is found in the disclosure, although the specification refers to Figure 1. The only drawing is included in WO 00/49623 publication and DE patent. Submitting the formal drawing for the US case is requested.

Specification

3. The specification is objected to as not containing a description of the outlet for carbon oxide gases mixed with a carrier gas, which is connectable with a mass spectrometer. Only feed line 13 for feeding the carrier gas is disclosed and shown on the Figure.

Claim Objections

4. Claims 9-14 and 18 are objected to because of the following informalities: the claims recite an expression “graphite cuvette”, which contradicts a definition of “cuvette”, see e.g. Dictionary.com: “*cuvette* is a small, **transparent**, often tubular laboratory vessel”. Graphite is not transparent. The common term used in the art is a “graphite crucible”. Appropriate correction is required.

Claim 18 is additionally objected to as containing a typo on line 15: “ti” instead of “to”.

Claim 9-14 and 18 are objected to as containing references to the drawing, which does not accompany the US application; moreover, such references make it unclear, if the claims are restricted to the specific details of the structure represented on the drawing.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 9-14 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an apparatus comprising an induction **heating** source, does not reasonably provide enablement for the one that has a different induction source. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to practice the invention commensurate in scope with these claims. No one of ordinary skill in the art can use the apparatus for liberating oxygen isotopes, which comprises e.g. magnetic induction source.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

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8. Claims 9-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites "induction source", which is an indefinite term, since there is a variety of induction sources including magnetic induction, and it is not clear, which specifically induction source is recited in the claim.

Claim 11 is unclear. What does it mean that CO or CO₂ arise from induction? CO and CO₂ "arise" from the chemical reaction, which is performed under heating conditions. The claim language needs clarification.

Claim 13 is not clear. Why should the solid under analysis be replaced with the "graphite cuvette", in which this solid is supposed to be placed? Also, the claim is not supported by the description or the Figure, and it is not clear, how the housing which is supposed to keep vacuum, can be opened from two opposite sides.

Claim 14 is unclear regarding structural relations between the parts of the apparatus. How a cavity at an upper end is related to a rod with which the "graphite cuvette" can be mounted in?

Claim 18 is rejected to as omitting an essential structural part, i.e. the outlet for the analytical carbon oxide gases carried by the carrier gas, which is connectable to the mass spectrometer.

Claim 18 is further rejected as omitting important structural relations between the structural elements of the apparatus, e.g. between a cooling jacket surrounding quartz housing and induction coil surrounding quartz housing. Since they both surround the quartz housing, it is not clear, how they are related with each other.

Claim 18 is further unclear as to which gas is meant by the expression "said gas" in the last subparagraph of the claim. Is this the gas formed by reaction of oxygen with carbon? Then it is not the gas containing oxygen, since there is no free oxygen contained in such gas. This should be the gas containing carbon oxides; the expression "carbon-oxygen gas" of the previous subparagraph should be changed to the "gas, comprising carbon oxides", as this is the only correct technical term for such gas. No "carbon-oxygen gas" exists in nature.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. **Claims 9-10, 13-14** are rejected under 35 U.S.C. 102(b) as being anticipated by Atkinson (US 1,052,907).

Atkinson discloses an apparatus for removing oxygen from solid (copper and copper alloys) in form of carbon oxides by melting alloy in a “graphite cuvette” (graphite crucible); the apparatus comprises the graphite crucible (col. 2, line 59, Fig. 1, A and H), provided in a quartz glass housing (“transparent fused silica envelope (Z)”) attached to the pump to create high vacuum, col. 3, lines 59-64); a rode (W) with which the graphite cuvette can be mounted in the housing; and heating induction means (X,Y).

11. **Claims 9-14 and 18** are rejected under 35 U.S.C. 102(b) as being anticipated by Glavin et al. (SU 394,699).

Glavin discloses “an apparatus for extracting gaseous impurities from analyzed metals and their alloys” (Title) teaching the following: “increased accuracy, sensitivity and speed of analysis are obtained by placing the h.f. inductive current concentrator inside the cooling jacket of the vacuum furnace. The concentrator is made in the form of demountable copper cylinder inside which is soldered the h.f. inductor coil. This construction greatly accelerates the crucible degassing and sample melting stages, which reduces the analysis time. The furnace operates at 10-6 torr. and the inductor and concentrator focus the radiation from inductor on to the crucible. The latter is made from graphite and heats up to 2500-2700 degrees C for degassing. After this the sample is introduced and melted and the generated gases are pumped to qualitative and quantitative gas analysis. The degassing time takes 1-3 mins. and the analysis time 1-2 mins” (Abstract). The apparatus comprises quartz water-cooled vacuum induction furnace (1), high-voltage high-frequency inductor (2), graphite crucible (3), graphite screen (4), current concentrator (5) and inductor (6). The outlet for pumping the gases out of the apparatus can

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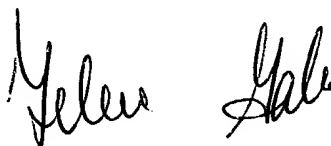
serve as a duct for admitting a carrier gas. The rod on which the graphite crucible is mounted to be placed in the housing is shown in the Figure (without the reference number).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yelena G. Gakh, Ph.D. whose telephone number is (571) 272-1257. The examiner can normally be reached on 9:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Yelena G. Gakh
4/21/04

A handwritten signature in black ink, appearing to read 'Yelena Gakh', is written over the typed name and date.